

Delrin® 500P BK602

ACETAL RESIN

DuPont Engineering Polymers



Prospector

Product Description

Delrin® 500P BK602 is a general purpose medium viscosity black acetal homopolymer resin for injection molding. Delrin® 500P has improved processing thermal stability compared to Delrin® 500.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Features	• Fatigue Resistant • Good Creep Resistance • Good Dimensional Stability	• Good Impact Resistance • High Stiffness • High Strength	• Homopolymer • Medium Viscosity • Ultrasonic Weldable
Uses	• Automotive Applications • Cast Film • Engineering Parts	• Fasteners • Gears • General Purpose	• Sheet • Tubing • Wire & Cable Applications
RoHS Compliance	• Contact Manufacturer		
Appearance	• Black		
Processing Method	• Cast Film • Extrusion	• Injection Molding • Profile Extrusion	• Sheet Extrusion
Part Marking Code (ISO 11469)	• >POM<		
Resin ID (ISO 1043)	• POM		

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.42 g/cm ³	1.42 g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	15 g/10 min	15 g/10 min	ISO 1133

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus (73°F (23°C))	450000 psi	3100 MPa	ISO 527-2
Tensile Stress (Yield, 73°F (23°C))	10300 psi	71.0 MPa	ISO 527-2
Tensile Strain			ISO 527-2
Yield, 73°F (23°C)	14 %	14 %	
Break, 73°F (23°C)	35 %	35 %	
Nominal Tensile Strain at Break 73°F (23°C)	25 %	25 %	ISO 527-2
Flexural Modulus (73°F (23°C))	435000 psi	3000 MPa	ISO 178

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-40°F (-40°C)	4.3 ft-lb/in ²	9.0 kJ/m ²	
-22°F (-30°C)	3.3 ft-lb/in ²	7.0 kJ/m ²	
73°F (23°C)	3.8 ft-lb/in ²	8.0 kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
73°F (23°C)	86 ft-lb/in ²	180 kJ/m ²	
Notched Izod Impact Strength			ISO 180/1A
-40°F (-40°C)	3.8 ft-lb/in ²	8.0 kJ/m ²	
73°F (23°C)	3.8 ft-lb/in ²	8.0 kJ/m ²	

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Heat Deflection Temperature			
66 psi (0.45 MPa), Unannealed	324 °F	162 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	205 °F	96.0 °C	ISO 75-2/A
Melting Temperature ²	352 °F	178 °C	ISO 11357-3
CLTE			ISO 11359-2
Flow: -40 to 73°F (-40 to 23°C)	0.000052 in/in/°F	0.000094 cm/cm/°C	
Flow: 73 to 131°F (23 to 55°C)	0.000061 in/in/°F	0.00011 cm/cm/°C	
Flow: 131 to 212°F (55 to 100°C)	0.000082 in/in/°F	0.00015 cm/cm/°C	
Transverse: -40 to 73°F (-40 to 23°C)	0.000054 in/in/°F	0.000098 cm/cm/°C	
Transverse: 73 to 131°F (23 to 55°C)	0.000064 in/in/°F	0.00012 cm/cm/°C	
Transverse: 131 to 212°F (55 to 100°C)	0.000093 in/in/°F	0.00017 cm/cm/°C	

Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Comparative Tracking Index	600 V	600 V	IEC 60112

Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating - UL			UL 94
0.0295 in (0.750 mm)	HB	HB	
0.0315 in (0.800 mm)	HB	HB	
0.0591 in (1.50 mm)	HB	HB	
0.118 in (3.00 mm)	HB	HB	
Flammability Classification			IEC 60695-11-10, -20
0.0295 in (0.750 mm)	HB	HB	
0.0591 in (1.50 mm)	HB	HB	
0.118 in (3.00 mm)	HB	HB	
UL	Nominal Value (English)	Nominal Value (SI)	Test Method
RTI Str			UL 746
0.0295 in (0.750 mm)	122 °F	50.0 °C	
0.0591 in (1.50 mm)	194 °F	90.0 °C	
0.118 in (3.00 mm)	203 °F	95.0 °C	
RTI Imp			UL 746
0.0295 in (0.750 mm)	122 °F	50.0 °C	
0.0591 in (1.50 mm)	185 °F	85.0 °C	
0.118 in (3.00 mm)	194 °F	90.0 °C	
RTI Elec			UL 746
0.0295 in (0.750 mm)	122 °F	50.0 °C	
0.0591 in (1.50 mm)	230 °F	110 °C	
0.118 in (3.00 mm)	230 °F	110 °C	
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	176 °F	80.0 °C	
Drying Time	2.0 to 4.0 hr	2.0 to 4.0 hr	
Suggested Max Moisture	< 0.20 %	< 0.20 %	
Processing (Melt) Temp	410 to 428 °F	210 to 220 °C	
Melt Temperature, Optimum			
Injection Molding	419 °F	215 °C	
Mold Temperature	176 to 212 °F	80.0 to 100 °C	
Mold Temperature, Optimum			
Injection Molding	194 °F	90 °C	
Drying Recommended	Not normally required unless moisture content of resin exceeds recommended level	Not normally required unless moisture content of resin exceeds recommended level	

Notes

¹ Typical properties: these are not to be construed as specifications.

² 10°C/min